

CLAIMS

1. A system for responding to requests, said system comprising:

a requesting node for transmitting a request;

a responding node for transmitting a response to the request; and

logic for transmitting a signal to the requesting node indicating the presence of the response, said logic receiving a signal from the responding node indicating the presence of the data and a signal from the requesting node indicating the presence of the request.

2. A circuit for transferring data, said circuit comprising:

a memory controller for issuing a read command to read the data;

a memory module for storing the data; and

logic for transmitting a signal to the memory controller causing the memory controller to receive the data, said logic receiving a signal from the memory module indicating the presence of the data and a signal from the memory controller indicating the presence of the read command.

3. The circuit of claim 2, further comprising:

a first printed circuit for transmitting the data from the memory module to the memory controller; and

a second printed circuit for transmitting the signal indicating the presence of the data to the logic.

4. The circuit of claim 2, wherein the memory controller further comprises:

a sequencer core for issuing the read command; and a queue for receiving the data.

5. The circuit of claim 2, wherein the logic further comprises:

an AND gate for transmitting the signal to the memory controller after a time interval, wherein during the time interval, the AND gate receives the signal from the memory controller and the signal from the memory module.

6. The circuit of claim 5, wherein the logic further comprises:

numerically controlled delay logic for receiving the read command, and for transmitting the signal indicating the presence of the read command after a first predetermined period of time after receiving the read command.

7. The circuit of claim 5, wherein the logic further comprises:

numerically controlled delay logic for receiving the read command, and for transmitting a first signal after a first predetermined period of time after receiving the read command and transmitting a second signal after a second

predetermined period of time after receiving the read command; and

an OR gate for transmitting the signal indicating the presence of a read transaction, wherein the OR gate further comprises:

- a first input for receiving the first signal; and
- a second input for receiving the second signal.

8. The circuit of claim 7, wherein the memory module transmits the signal indicating the presence of the data between transmission of the first signal and transmission of the second signal.

9. The circuit of claim 7, wherein the memory module transmits the signal indicating the presence of the data between transmission of the rising edge of the first signal and the transmission of the falling edge of the second signal.

10. The circuit of claim 2, wherein the memory module is a DDR-SDRAM.

11. A method for responding to a request, said method comprising:

- transmitting a request;
- transmitting a signal indicating the request;
- transmitting a response;
- transmitting a signal indicating the transmission of the response; and

transmitting another signal indicating the transmission of the response, based on the timing relationship between the signal indicating the request and the signal indicating the transmission of the response.

12. A method for transferring data, said method comprising:

requesting to read the data;

transmitting a signal indicating the request to read the data;

transmitting the data;

transmitting a signal indicating the transmission of the data;

transmitting another signal indicating the transmission of the data, based on the timing relationship between the signal indicating the transmission of the data and the signal indicating the request to read the data; and

reading the data, after transmitting the signal transmitted after requesting the read transaction and after transmitting the signal indicating transmission of the data.

13. The method of claim 12, wherein the data is transmitted by a first printed circuit and wherein the signal indicating the transmission of the data is transmitted over a second printed circuit.

14. The method of claim 12, wherein the signal indicating the request to read the data is transmitted at a predetermined period of time after the requesting to read the data.

15. The method of claim 12, further comprising:
transmitting a first signal after a first predetermined period of time after the requesting to read the data;

transmitting a second signal after a second predetermined period of time after the requesting to read the data; and

wherein the signal indicating the transmission of the data is transmitted between transmitting the first signal and transmitting the second signal.

16. The method of claim 15, wherein the signal indicating the presence of the data is transmitted between transmitting the first signal and transmitting the second signal.

17. A circuit for transferring from memory, said circuit comprising:

a memory controller, wherein the memory controller is operable to transmit a read request;

a memory module, wherein the memory module is operable to transmit data and a signal indicating transmission of the data;

logic connected to the memory controller, wherein the logic is operable to transmit another signal to the memory controller indicating the transmission of the data, and wherein the logic is connected to the memory controller to receive a signal indicating the read request;

a first printed circuit connected to the memory controller and the memory module, wherein the first printed circuit is connected to transmit the read request to the memory module; and

a second printed circuit connected to the memory module and the logic, wherein the second printed circuit is connected to transmit the signal indicating transmission of the data from the memory module to the memory controller.

18. The circuit of claim 17, wherein the logic further comprises:

a first numerically controlled delay logic;

a second numerically controlled delay logic connected to the first numerically controlled delay logic;

an OR gate connected to the first numerically controlled delay logic and the second numerically controlled delay logic; and

an AND gate connected to the OR gate and connected to the second printed circuit.

19. The circuit of claim 18, wherein the first numerically controlled delay logic controls a rising edge of a gating signal and wherein the second numerically controlled delay logic controls the falling edge of the gating signal.

20. The circuit of claim 17, wherein the memory controller further comprises:

a sequencer core connected to the logic and the first printed circuit; and

a queue connected to the logic to receive the another signal indicating the transmission of the data.